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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,269	05/22/2002	Peter Anthony Hulbert	3036/50901	1707

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EXAMINER

DEAN, RAYMOND S

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,269	HULBERT ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 3 and 5 - 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 3 and 5 - 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 24, 2005 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicants' assertion on page 13 4th paragraph of the Remarks "Assuming for the sake of the present discussion that this characterization is correct, Applicants note ...". Wallace teaches the use of channel for transmission of synchronization signals each of a plurality of base stations to remaining base stations (See Figure 1, Column 5 lines 50 – 52, Column 5 lines 61 – 67, Column 6 lines 1 – 17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Wallace with the RACH taught by Popovic for the purpose of enabling the mobile station to access a serving base station such that said mobile station can transmit information to said base station when said mobile station desires as taught by Popovic.

Examiner respectfully disagrees with Applicants' assertion on page 14 3rd paragraph of the Remarks "The invention, however, relates to the use of this RACH ...". Wallace, as set forth above, teaches the use of channel for transmission of synchronization signals each of a plurality of base stations to remaining base stations. The modification of the synchronization channel of Wallace with the RACH of Popovic for the purpose of enabling the mobile station to access a serving base station such that

said mobile station can transmit information to said base station when said mobile station desires will render the claimed invention.

2. Applicant's arguments with respect to claim 12 have been considered but are moot in view of the new ground(s) of rejection.

Dent teaches a method of locating a mobile station within a telecommunications cell forming part of a telecommunications system (See Figure 1, Column 5 lines 10 – 12), the telecommunications cell comprising a base station and at least one mobile station (See Figure 1), the method comprising the steps of: determining the location of at least three base stations (See Figure 1, Column 5 lines 14 – 17); transmitting a signal from the mobile station; receiving the transmitted signal at each of the three base stations (See Column 5 lines 47 – 51); comparing the received signals with timing signals in each of the base stations; and using the comparison at each base station to determine the location of the mobile station (See Column 5 lines 55 – 67, Column 6). Wallace teaches scheduling synchronization measurements for each of the base stations (See Column 10 lines 28 – 36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the synchronization method taught by Wallace in the wireless system of Dent as an alternative means for synchronizing the base stations of the wireless system as taught by Wallace. Popovic teaches scheduling synchronization measurements utilizing a random access channel (See Column 3 lines 45 – 64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Dent in view of Wallace

with the RACH taught by Popovic for the purpose of enabling the mobile station to access a serving base station such that said mobile station can transmit information to said base station when said mobile station desires as taught by Popovic.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. (US 6,590,881) in view of Popovic (US 6,567,482).

Regarding Claim 1, Wallace teaches a method of providing synchronization between a plurality of base stations in a telecommunications system (Column 4 lines 29 – 31, Column 5 lines 50 – 52), the telecommunications system comprising a plurality of cells, each of the plurality of cells having one of the plurality of base stations and at least one mobile station (Figure 5, Column 9 lines 49 – 52, this system can be a UMTS system thus base stations (502, 504) will create cells with mobile stations (506) located in said cells), the method comprises the steps of: providing at least one channel for usage in the plurality of cells (Column 5 lines 50 – 52, the forward link comprises channels); transmitting a synchronization signal in a given one of the at least one channel, the transmission being from each of the plurality of base stations to those

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remaining base stations within the telecommunications system which are within transmission range of each respective base station (Figure 1, Column 5 lines 50 – 52, Column 5 lines 61 – 67, Column 6 lines 1 – 17); and for each respective base station calculating respective time differences between corresponding signals transmitted by the respective base station and received from respective other base stations within transmission range of the respective base station (Column 6 lines 46 – 52); and adjusting timing of the synchronization signals of the respective base station according to calculated time differences (Column 6 lines 46 – 52).

Wallace does not specifically teach providing at least one channel comprising time slots for usage in the plurality of cells and wherein the at least one channel is a random access channel transmitted at a frequency within a band of frequencies that is provided for communications with mobile stations.

Popovic teaches providing at least one channel comprising time slots (Figure 8A, Column 3 lines 27 – 29, Column 3 lines 45 – 64, the RACH comprises time slots) and wherein the at least one channel is a random access channel transmitted at a frequency within a band of frequencies that is provided for communications with mobile stations (Column 3 lines 27 – 29, the wireless system will have a band of frequencies on which to operate, the RACH will be at a particular frequency within said band of frequencies).

Wallace and Popovic (Column 8 lines 32 – 34) both teach a UMTS system comprising base stations and mobile stations thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the RACH taught by Popovic in the UMTS system of Wallace for the purpose of enabling the mobile station

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to access a serving base station such that said mobile station can transmit information to said base station when said mobile station desires as taught by Popovic.

Regarding Claim 2, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 1. Wallace further teaches for each of the plurality of base stations; reporting the time differences calculated to a radio network controller (Column 6 lines 46 – 52, Column 9 lines 49 – 52, this system can be a UMTS system thus the centralized processor can be the RNC); calculating a synchronizing adjustment corresponding to each base station is calculated from the reported time differences (Column 6 lines 46 – 52); informing each base station individually of the corresponding synchronizing adjustment calculated (Column 6 lines 46 – 52, a synchronizing adjustment will be made in the base stations thus said base stations will be informed of said synchronizing adjustment such that said base stations' timing will be adjusted properly); and synchronizing each base station according to the corresponding synchronizing adjustment (Column 6 lines 46 – 52).

Regarding Claim 3, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 1. Wallace further teaches each respective base station acting autonomously on the time differences calculated by adjusting its synchronization to minimize the time differences (Column 6 lines 46 – 52).

Regarding Claim 5, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 1. Popovic further teaches wherein the random access channel comprises a time slot per TDMA frame (Figure 8A, Column 3 lines 45 – 64).

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Regarding Claim 6, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 5. Popovic further teaches wherein the random access channel is allocated to uplink transmissions in order to initiate communications (Column 3 lines 27 – 29).

Regarding Claim 7, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 6. Popovic further teaches wherein communications are initiated by requesting a resource unit for uplink usage (Figure 8A, Column 3 lines 45 – 64, the burst comprises a code or preamble, there is combination of said code or preamble in one time slot, which is the resource unit).

Regarding Claim 8, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 5. Wallace further teaches allocating the utilization of a timing probe for base station synchronization according to a schedule (Column 10 lines 28 – 36). Popovic further teaches a random access channel time slot (Figure 8A, Column 3 lines 27 – 29, Column 3 lines 45 – 64, the RACH comprises time slots).

Regarding Claim 9, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 5. Wallace further teaches using a second channel of said at least one channel to silence uplink communications to allow the transmissions of synchronization transmissions from the first base station to other base stations (Column 10 lines 13 – 27, Column 9 lines 49 – 52, this system can be a UMTS system thus a plurality of channels will be used, the base stations can blank or silence communications so that synchronization can take place). Popovic further teaches

random access channel time slots (Figure 8A, Column 3 lines 27 – 29, Column 3 lines 45 – 64, the RACH comprises time slots).

Regarding Claim 10, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 9. Popovic further teaches a broadcast control channel (Column 8 lines 32 – 34, this is a UMTS system thus there will be a broadcast control channel).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. (US 6,590,881) in view of Popovic (US 6,567,482) as applied to Claim 1 above, and further in view of Wang (US 6,606,309).

Regarding Claim 11, Wallace in view of Popovic teaches all of the claimed limitations recited in Claim 1. Wallace further teaches synchronizing the plurality of base stations. (Column 5 lines 50 – 52, Column 6 lines 46 – 52). Popovic further teaches wherein the random access channel time slot used is always contained in a fixed numbered frame (Figure 8A, Column 3 lines 27 – 29).

Wallace in view of Popovic does not teach the random access channel time slot used is always contained in a fixed numbered frame within a plurality of multi – frames.

Wang teaches a plurality of multi – frames (Column 12 lines 6 – 9, Column 12 lines 64 – 67).

Wallace in view of Popovic and Wang teach a wireless system that uses the RACH thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the RACH multi – frames taught by Wang in the wireless

system of Wallace in view of Popovic for the purpose of reducing the probability of collisions between access request and short message acknowledgements as taught by Wang.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent et al. (US 6,243,587) in view of Wallace et al. (US 6,590,881).

Regarding Claim 12, Dent teaches a method of locating a mobile station within a telecommunications cell forming part of a telecommunications system (Figure 1, Column 5 lines 10 – 12), the telecommunications cell comprising a base station and at least one mobile station (Figure 1), the method comprising: determining the location of at least three base stations (Figure 1, Column 5 lines 14 – 17); transmitting a signal from the mobile station; receiving the transmitted signal at each of the three base stations (Column 5 lines 47 – 51); comparing the received signals with timing signals in each of the base stations; and using the comparison at each base station to determine the location of the mobile station (Column 5 lines 55 – 67, Column 6).

Dent does not teach scheduling synchronization measurements for each of the base stations utilizing a random access channel.

Wallace teaches scheduling synchronization measurements for each of the base stations (Column 10 lines 28 – 36).

Dent and Wallace both teach a wireless system wherein the base stations are synchronized thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the synchronization method taught above by

Wallace in the wireless system of Dent as an alternative means for synchronizing the base stations of the wireless system as taught by Wallace.

Dent in view of Wallace does not teach scheduling synchronization measurements utilizing a random access channel.

Popovic teaches scheduling synchronization measurements utilizing a random access channel (See Column 3 lines 45 – 64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Dent in view of Wallace with the RACH taught by Popovic for the purpose of enabling the mobile station to access a serving base station such that said mobile station can transmit information to said base station when said mobile station desires as taught by Popovic.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 571-272-7877. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Raymond S. Dean
May 4, 2005


NAY MAUNG

SUPERVISORY PATENT EXAMINER